INFINITY™

12-crystal thin film monitor
2nd generation

user guide

COLNATEC

Infinity™ at a Glance

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This guide discusses assembly and proper care and handling of Infinity™ (2nd generation), a 12-crystal sensor designed to be controlled either by Infinity™ control box or an external controller. The motor and all material used to build Infinity™ head are compatible with high vacuum applications.

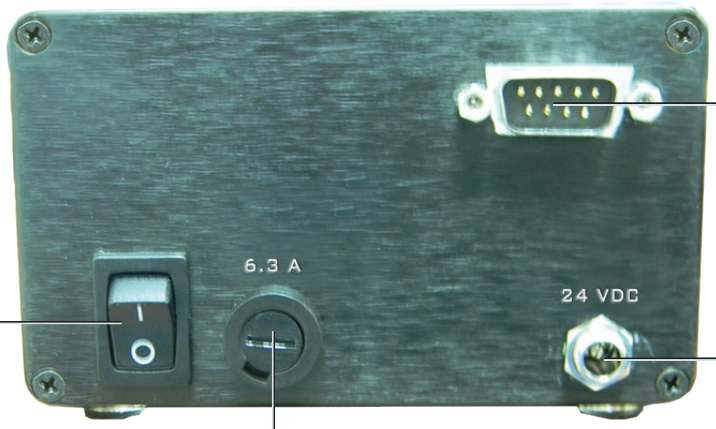
Eon-ID™ Connectors

Infinity™ Front

Home Button
Returns crystal port to home position.

Step Button
Avances crystal carousel one crystal per step.

Infinity™ Back



Head Control and External Input

Main Power Switch

Power Port
Enables external control of Infinity™.

Fuse Compartment

INSPECT PRODUCT CONDITION ON ARRIVAL Examine Infinity™ for any signs of physical damage that may have occured during shipping. Make sure that the tamper-evident labels are intact. Before shipping, Infinity™ was calibrated and tested by Colnatec to meet the highest quality standards. It is important that you take a few minutes to inspect the product to ensure that your equipment was not damaged or otherwise tampered with during transit.

Installing Mechanical Components

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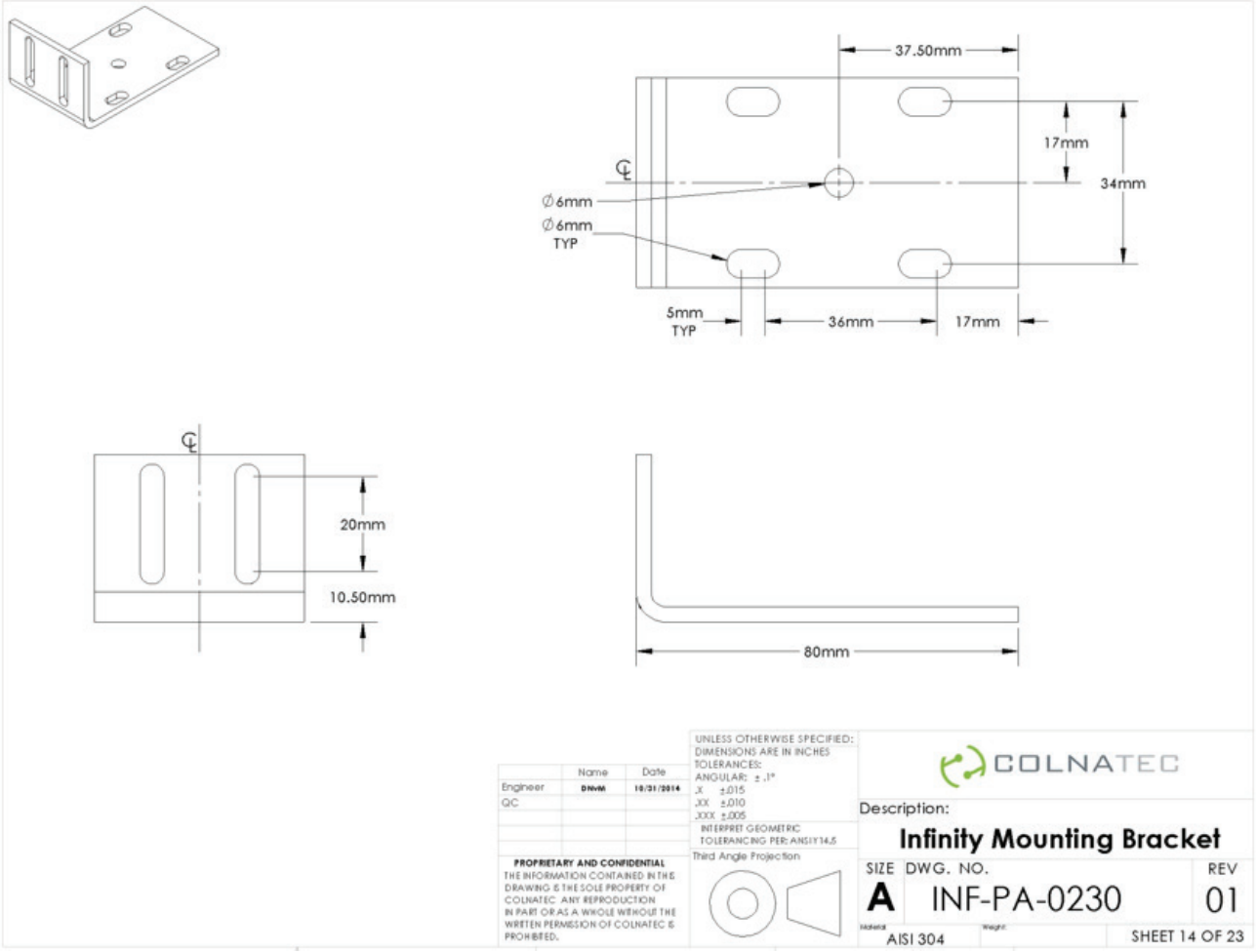
Mounting the sensor head

Infinity™ 12 comes standard with a mounting bracket that orients the sensor head parallel to the surface to which it is mounted. The bracket also allows up to 20mm travel perpendicular to the mounting surface. For other mounting options contact Colnatec.



Cooling lines

Infinity™ 12 comes standard with a cooling line kit. Assembly is required. The kit includes the following:

- Two cooling lines 1/4 inch outer diameter stainless steel tubes.
- Four Swagelok VCR butt weld tube ends.
- Four male Swagelok VCR 1/4 in fittings.
- Four VCR stainless seals.

The cooling flow should be through the motor coil first then the motor mount.

Connecting Electrical Components

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Connecting the Infinity™ control box

- Verify that the power switch on the back panel is in the off position.
- Connect the power supply (24 VDC).
- Plug in the DB-9 plug and secure it in place with screws.

Connecting an external controller

- Connect the Remote Home cable to your controller. To trigger the home function you need to connect (short) the center wire to the outer ground.
- Connect the Remote Step cable to your controller. To trigger the step function you need to connect (short) the center wire to the outer ground.

Connecting control cables to feed through

Simply connect the subminiature-C 9-pin connector of both the air side control cable and vacuum side control cable to the feed through. Use a 5/64 SAE allen wrench to tighten the screw to secure each 9-pin connector.

Infinity™ Usage

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Using the Infinity™ control box

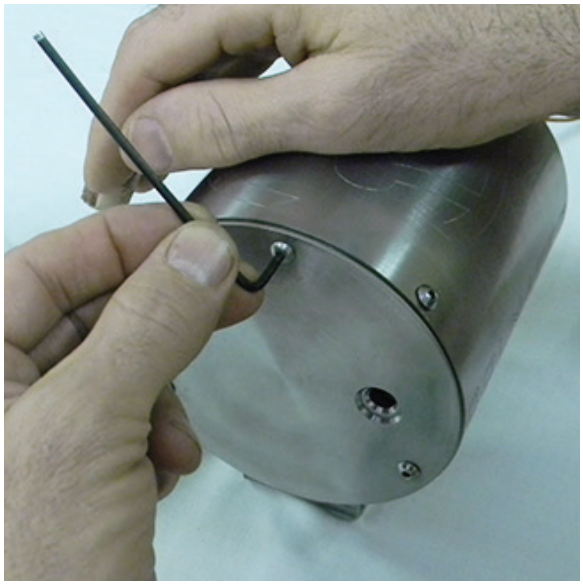
- Turn on the controller (power switch on the back panel). The red LED will light up. The controller is programmed so that the step button does not function until the Infinity™ crystal carousel has been homed.
- Press the Home button (green) to start the homing function. When the crystal carousel has finished homing, the green light on the control box will glow.
- Press the Step button (red) once to move from one crystal location to the next. When the final crystal location has been reached the step function must be reset. Press Home button to reset the step function.

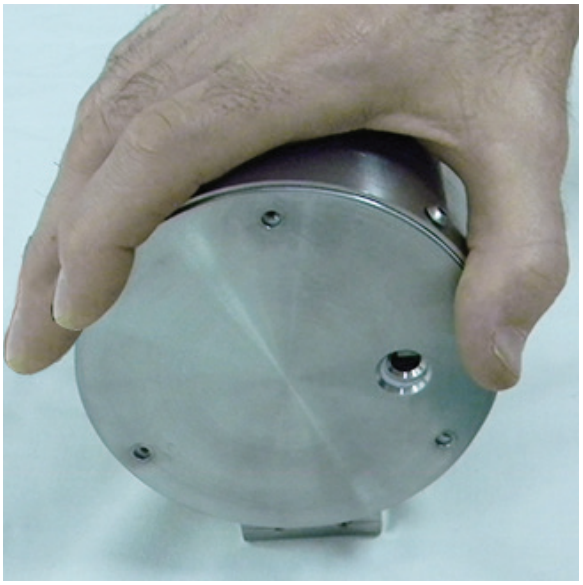
External control of Infinity™

Controlling Infinity™ from an external source operates on the same principles as the Infinity™ control box. When external control is used, the external control system remotely operates the home and the step functions. **Note: For external control to be enabled, the Infinity™ control box must be powered on.**

Loading/Changing Crystals 5

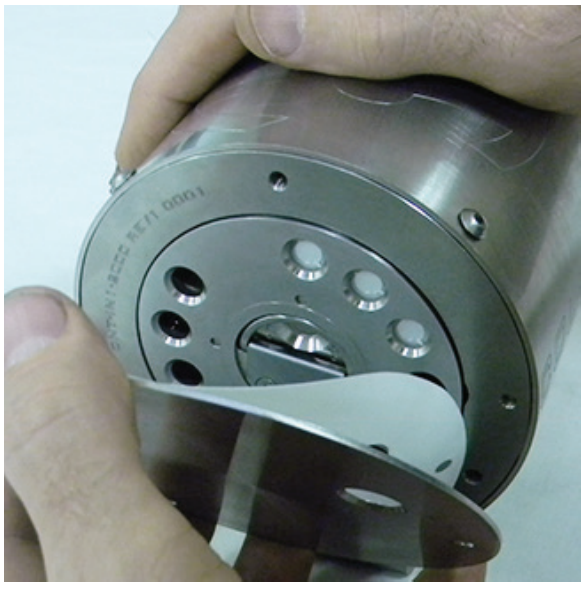
Step One





Untighten and remove screws from front coverplate using a 2.5 mm hex key.

Step Two

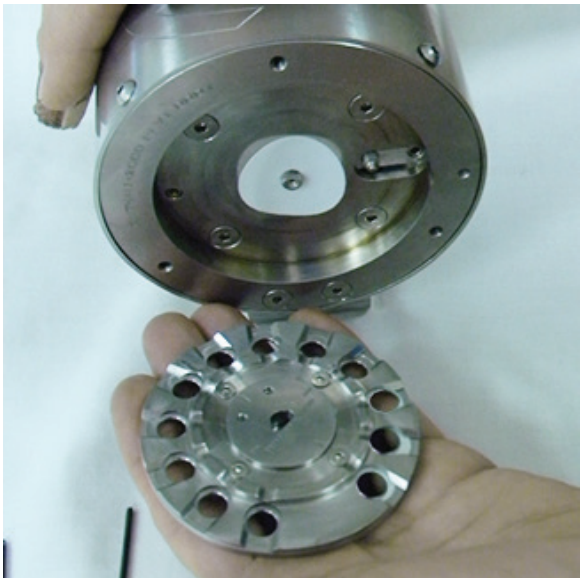


Remove the faceplate and teflon insulator from the Infinity™ housing. Note: Crystal carousel floats freely in place, so exercise caution to prevent dropping carousel.

Step Three

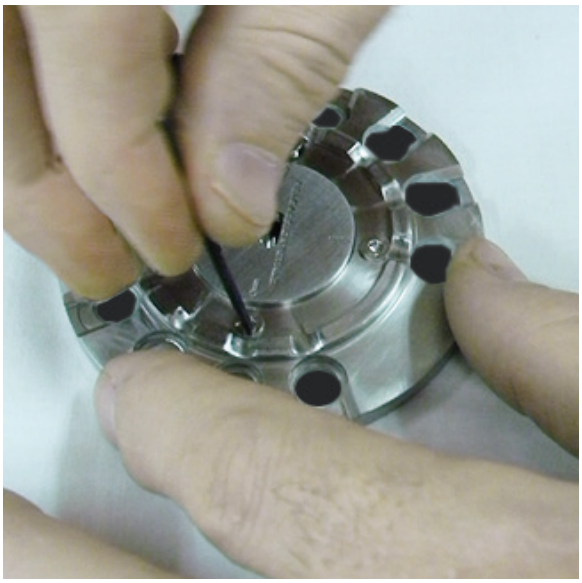
To remove crystal carousel, lift integrated ring and pull.

Step Four



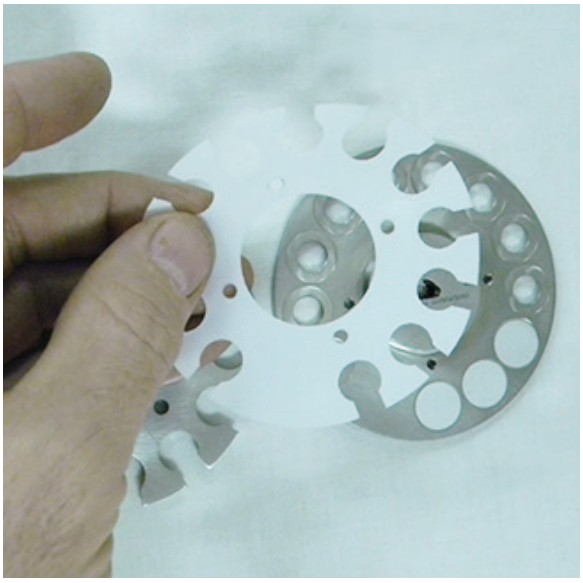
Remove crystal carousel.

Step Five



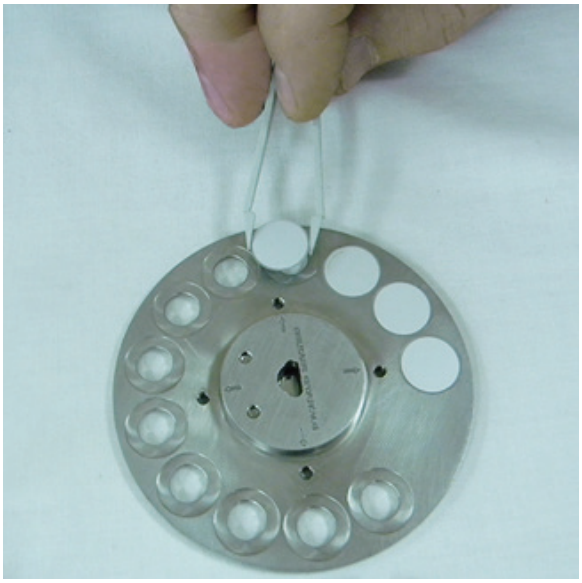
On crystal carousel cover plate, untighten screws using a sequential torque pattern. Remove screws.

Step Six



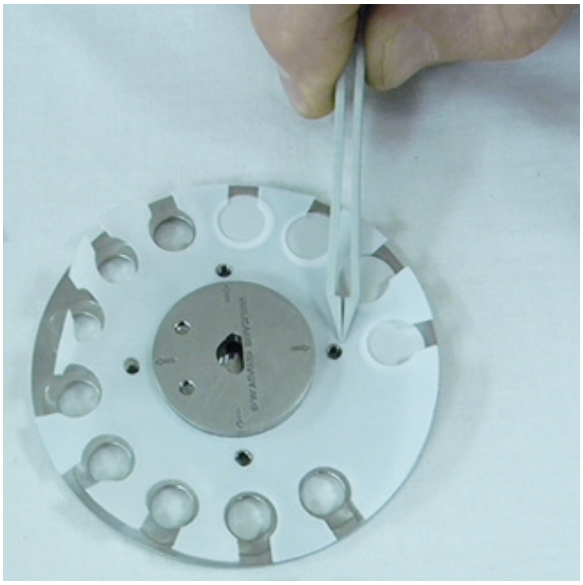
Separate carousel cover plate, carousel body, and teflon insulator.

Step Seven



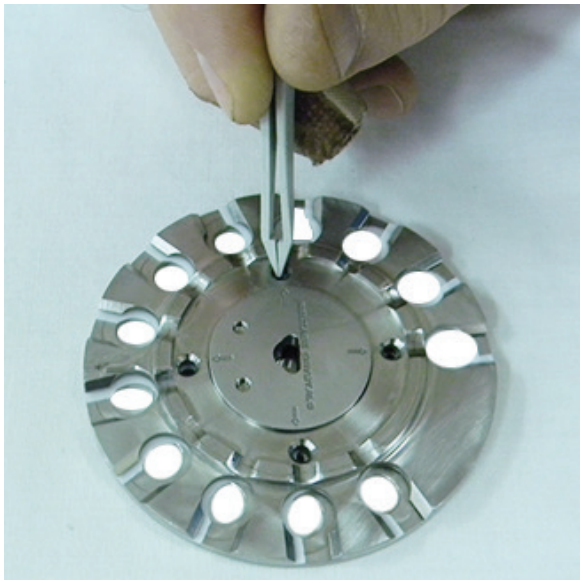
Use nonconductive forceps to place crystals into carousel slots.

Step Eight



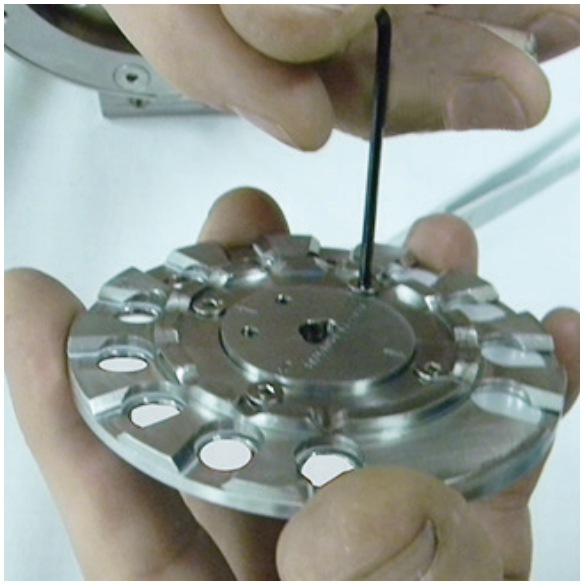
Replace teflon insulator onto crystal carousel body. Insulator fits one way only.

Step Nine



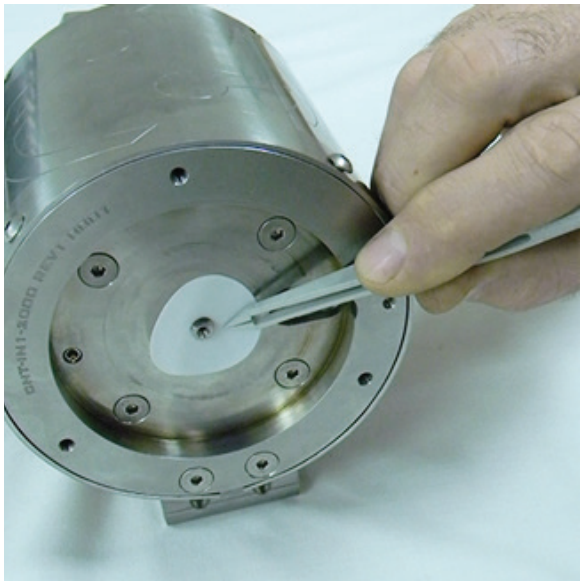
Replace carousel coverplate, making sure that crystal slots and screw holes are properly aligned.

Step Nine



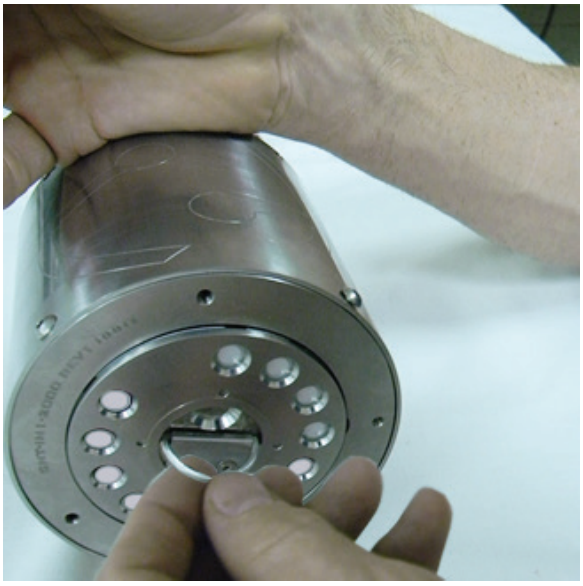
Replace screws; use the 2.5 mm hex key to tighten screws, alternating among the screws and using a sequential torque pattern. Note: Use caution when tightening screws. Over-tightening will damage crystals.

Step Ten



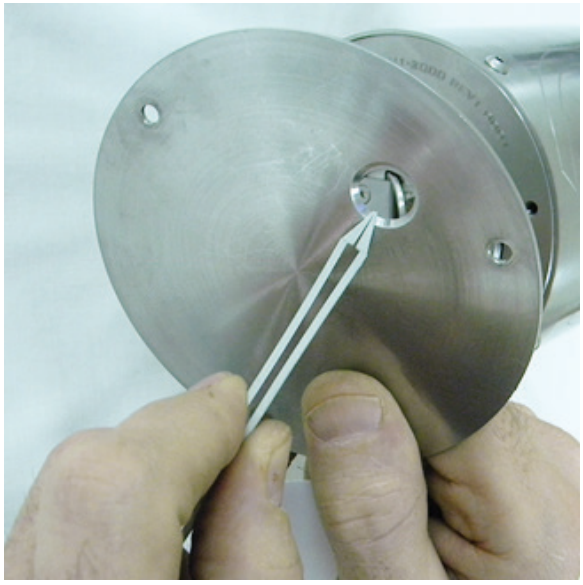
Replace teflon insulator pad onto interior housing to prepare for crystal carousel.

Step Eleven



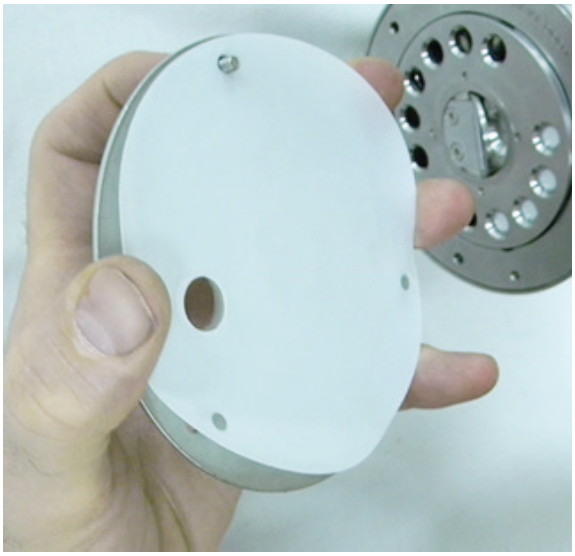
When reinstalling crystal carousel into interior housing, make sure to align the flat surface on the shaft to the flat surface on the carousel.

Step Twelve



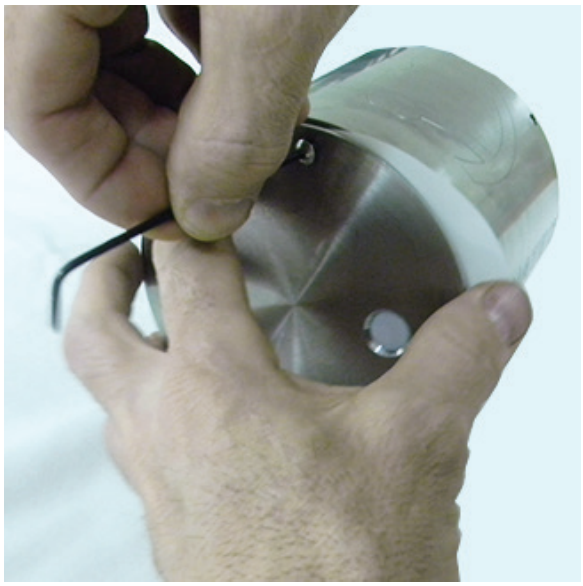
Before replacing front coverplate onto Infinity™ housing, ensure that grooved edge (chamfer) of crystal port is on the exterior.

Step Thirteen



Replace teflon insulator to underside of front coverplate, making sure that screw and crystal port holes are in proper alignment. Use upper screw to help align holes.

Step Fourteen



Replace coverplate and use hex key to tighten screws.

Specifications

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Table 1 – Hardware Specifications:

Item	Specifications
Number of Crystals	12

Table 2 – Electrical Specifications:

Item	Specifications
Power Input	120 – 240 VAC, 5.0 A
Power Usage	24 VDC, 3.0 A RMS, 4.2 A Peak

Table 3 – External Control Specifications:

Item	Specifications
Inputs	2
Type	Sinking

Because it is a scientific instrument, the Infinity™ sensor head should be treated with care. In the event of any difficulties please contact Colnatec's Customer Support. Excessive tinkering or fiddling may result in greater damage to the unit. If you cannot resolve an issue, please contact **support@colnatec.com**, or call **(480) 634-1449**.

WARNING Do not attempt to repair electrical problems. Tampering with the Infinity™ electrical systems may result in electrical fire and increased interference in crystal measurement.

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2nd generation